When we have reason to believe an abscess has formed, either form must be treated by the knife. In cases which have gone on in an unfavorable way, it is always better to make an unnecessary incision than to let the breast open spontaneously, because breasts which open spontaneously almost never run a short course, while those which are treated by early incisions are usually healed within ten days or a fortnight.

OPERATIVE TREATMENT OF MAMMARY ABSCESS.

When a breast has refused to get better for from five to six, or at the outside, ten days, according to the acuteness of the case, and when a hard phlegmonous lump surrounded by edematous material which is getting worse can be felt, do not wait for a soft spot to appear in the centre, but make an exploratory incision early.

The technique of the operation is of the very greatest importance. In the first place, absolute asepsis is necessary. The skin of the breast should be disinfected as it would be for a celiotomy, that is, first scrubbed with soap and water, then sopped with permanganate of potash, then cleaned with oxalic acid, and finally scrubbed with a nail-brush and corrosive. The hands and instruments should be treated with the same care.

An extremely important point in the operation is that the lacteal ducts should not be divided or wounded. A duct which has been divided or torn across becomes obliterated, and the next time the breast fills up, that is, with the next child, the milk secreted by the acini which have been cut off collects and there will then be inspissation with the risk of another abscess.

The object of the operation is, then, to evacuate the pus without dividing any of the lacteal ducts. These ducts radiate towards the nipple and if the cut is made in this direction it is least likely to injure them; they, however, branch so frequently that if the operation were done with the knife throughout, there would be almost no chance of avoiding the ducts. The technique which I think should be pursued is as follows: The knife should make an incision radiating from the nipple, through the skin and subcutaneous tissue, and this cut should be long enough to permit the finger to pass through it easily. Then a director or large probe should be pushed down to the centre of the bunch and moved about until it finds the pus. Next a dilator should be run down on the director and the passage dilated. The finger should next be forced into the centre of the abscess, no cutting being done after the skin has been divided. The finger should be swept around everywhere to break down all the tissue that is soft enough to be broken down with any readiness.

Care must be taken to find all the pockets or side openings, which usually exist, and that the partitions between them are broken down; and any one of them which is at a distance from the incision must be exposed by a counter-opening. To make a counter-opening, take a long probe and carry it under the guidance of the finger to the farthest point of the pocket in question, then push it on until you see the point dimpling the skin upward; make a fresh skin incision at this point, dilate it, and put the finger in again, feeling about for fresh pockets as before.

After the counter-opening is made, the whole cavity should be syringed out with a corrosive-sublimate solution, 1–2,000, or perhaps better with a fifteen-volume solution of peroxide of hydrogen diluted with equal parts of water. The whole cavity should be puffed full and the process repeated until the solution comes out perfectly clear. Then put in rubber drainage-tubes, or gauze strips, so that each of the subsidiary cavities has direct drainage. If the pus is thick use rubber tubes, if it is thin you may use gauze. If rubber tubes are used, substitute gauze as soon as possible, because the pressure of the tubes may cause them to ulcerate through the neighboring ducts.

Having opened, disinfected, and drained, put on a sterile dressing, packing it all around the breast, and then bind the whole breast down against the ribs pretty firmly with an elastic gauze bandage, so that the walls of the cavity may have a chance of being brought together and of healing by first intention.

The wound should be redressed within twenty-four hours, and if you are compelled to leave rubber drainage-tubes in, dress again in from twenty-four to forty-eight hours more. All drainage should ordinarily be gotten rid of in a week or ten days. If this method be thoroughly carried out, I think it will yield uniformly good results.

Original Articles.

NEURASTHENIA.[1]

BY B. W. BARTLETT, M.D., ROWLEY, MASS.

NEURASTHENIA is a functional disease of the nervous system characterized principally by asthenia and exhaustion, and manifesting itself by headache, insomnia, cerebral depression, neuro-muscular enfeeblement; often by various symptoms referable to the spinal cord (rachialgia, spinal irritation) and by atonic gastro-intestinal dyspepsia. It is described by Beard as cerebral or spinal according as the predominant symptoms are referable to the higher or lower nerve centres.

ETIOLOGY.

Beginning with those causes which are least recognized, I would mention, first, a dry atmosphere. On this cause (to which, by the way, Dana attributes considerable weight) may be in part dependent the unusual prevalence of neurasthenia in our Northern climate. I would not venture much speculation as to how dry climates favor neurasthenia. The fact, I believe to be unquestioned. Extremes of heat and cold predispose to nervous debility. In the Southern climates, and in the small islands surrounded by water, marked extremes of temperature are uncommon, and we find less susceptibility to nervous excitability in the inhabitants of these climates as contrasted with the inhabitants of the Northern States, in which severe winters are followed by a high range of temperature during the summer months. The cold of the winter obliges residents to remain much of the time indoors, subjected to a dry, overheated atmosphere. On the other hand, the hot weather of summer is relaxing and does not tend to encourage athletic sports and pastimes. It is noteworthy in this connection, that in England where the climate is more moist and equable, athletic exercises can be indulged in during all seasons of the year. I regard these factors as predisposing to neurasthenia by their debilitating influence; and to faulty habits of eating and drinking may be attributed a similar predisposition. The principal and exciting causes are

[1] Read before the Essex North District Medical Society.

such as directly conduce to nerve tire and enfeeblement.

(1) *Prolonged Mental Application*, as to study or business, using up cerebral and nervous energy. This cause is especially operative when conjoined with dyspeptic troubles, and with insomnia. A man will endure very severe and very persistent mental strain if he can sleep well at night, and if the digestive organs are vigorous.

(2) *Worry.* There is one reason why our civilization so predisposes to neurasthenia — the present age is one of worry. Men and women are competing for a position for office, for honors, or else they are struggling to retain a position; hence there is constant anxiety and care. Many are engaged in commercial enterprises which give them great worry and little rest. Many a stock-gambler, many a speculator in "futures," has become a broken-down neurasthenic. Many merchants doing a large business give themselves too little sleep, and prematurely become nervous wrecks. How often among professional men, scholars, literary men, we hear complaints of tired limbs and aching eyes and heads! This is especially true of those who turn day into night and night into day. It is from the great army of the unrested that our modern neurasthenics are for the most part recruited.

(3) There are also *Emotional Causes.* Grief, disappointment, remorse, brooding over losses and crosses, promote wear and tear of brain and nerve.

(4) *Sexual Abuses and Onanism* enter for their share in the etiology of the disease.

(5) *Sudden Shocks* (as in railroad accidents), excessive physical exertion, excessive child-bearing, may produce neurasthenia. Nor must we omit reflex irritations, such as prostatic and urethral disease, mechanical displacements of the womb, disturbances of the stomach, intestine or liver, and ocular deficiencies, as hypermetropia and astigmatism. But many of the causes above mentioned are perhaps rather predisposing than exciting. Bouchard, who has written so admirably on auto-intoxication, advances the notion that neurasthenia in many cases (and notably in the gastric form) is due to auto-intoxication by ptomaines and even by leucomaines. He calls attention to the fact that toxines secreted by the animal cells (leucomaines) formed in circumstances of vitiated nutrition may produce nervous exhaustion of an intense and peculiarly intractable kind.

SYMPTOMS.

Among the various symptoms on which authors dwell there is one which I should emphasize, namely, the tired feeling after exertion. I may, however, remark that this tired feeling is often lost in melancholia and other forms of insanity, as Dr. Cowles has so well pointed out in his Shattuck Lecture. All patients with whom I have had to do have complained of this symptom. They awake in the morning unrefreshed by their sleep, which is seldom or never unbroken. The attempt to walk, to do housework, to read, even in some cases to sit up, soon fatigue them. Muscular exercise causes aching in the back and limbs; reading, an aching in the eyes and headache. There is almost constantly a painful sense of lassitude, such as one experiences who is coming down with a fever. All these sensations are an expression of an ill-nourished condition of the nerves and nerve centres. Volition is weakened; the power to co-ordinate harmoniously the various higher cerebral activities is lessened, if not lost. Neurasthenics have difficulty in concentrating and keeping their attention on any subject for more than a brief time; their thoughts are continually wandering in accordance with the incoming flow of excitations which they are unable to inhibit. Of course, this is only an exaggerated degree of that weakness of voluntary control from which we all, except a few gifted minds, suffer more or less. The neurasthenic patient is also subject to headache, which often comes on spontaneously, often follows mental application. Sometimes the headache is almost continuous, though it is generally remittent; it is very likely to supervene after a period of rest. The painful paroxysms are accompanied sometimes by sensations of vertigo, tinnitus aurium, obnubilation of the sight and at times by hyperesthesia of the scalp (Beau). Charcot was so struck by a symptom in connection with this headache of neurasthenic patients, namely, a sensation of constriction about the head and temples, as though the head was compressed in a tight helmet, that he was in the habit of designating these patients by the name *galeati* (helmet-wearers). In my own cases I have not found headache to be so predominant a symptom — except as a sequel of mental application and excitement.

Insomnia.— This has been present in the majority of cases. Neurasthenic patients, as a rule, are poor sleepers. Some patients lie awake till a late hour of the night, and get only a morning nap; others go to sleep at once, but awake after a few hours and lie awake till morning. Most patients soon begin the use of some hypnotic to aid them in procuring sleep. An increase in the dose of the drug (whether it be opium, chloral, sulfonal) is soon necessitated. I believe with Folsom, that it is better to be satisfied with a few hours of natural sleep than to resort to the use of hypnotics. I do not believe that the benumbing effect which follows these drugs is a true rest to the brain cells. If any hypnotic must be administered, a dose of bromide, sulfonal or trional may do as little harm as anything, and under all circumstances, should be administered temporarily, great care being taken that the patient shall not become dependent on the drug. We have in static electricity an agent of great value in the treatment of insomnia. I certainly have obtained very favorable effects from Franklinization. The head-plate is used, and the electricity is conveyed in the form of breezy currents, which are agreeable and soothing. By means of the discharging head-electrode, the patient is also electrified through the clothes. The *séance* lasts about half an hour, and the patient often goes to bed prepared to go to sleep.

Before dismissing the subject of headache, I should say something about headaches from eye-strain. Defective accommodation seems to be a frequent cause of pain in the head in neurasthenic people. In my experience I have found it to be a severe pain, extending through the head from the eyes to the occipital region, and of an explosive character, recurring at short intervals after overwork of the eyes. Many children suffer from similar headaches till the hypermetropia or other eye-trouble is remedied by properly fitting glasses.

Rachialgia, Backache.— Neurasthenic patients frequently complain of pain in the back coming on after exertion, or without known cause, a pain which is elicited by pressure along the vertebral column. The

tender spots over the spine which characterize this condition, were formerly considered as pathognomonic of an individual morbid entity with definite syndrome, to which was given the name of "spinal irritation." The latter is not a disease apart, but simply an indication of exaggerated sensibility of the vertebral column, and belongs to the train of symptoms of *neurasthenia, with spinal form.* Spinal irritation is often attended with general cutaneous hyperesthesia; irritability of the breasts, ovaries and womb in women; fleeting pains of a neuralgic type in various parts of the body; a rapid or slow pulse, which fluctuates widely during periods of excitement or fatigue; excessive perspiration of the feet and hands; muscular twitchings; chilliness; creeping sensations along the spine; itching of the skin; weakness of the bladder and rectum; and other symptoms of disordered and perverted innervation which Beard has so well described.

Aversion for Fluids. — The neurasthenics are, I believe, proverbial for their dislike for liquids, and usually this condition has lasted so long that there is positive deficiency of water in the economy. The skin covering the body becomes dry, if not scaly. The urine is scanty to a high degree, some patients scarcely voiding four ounces in twenty-four hours. The tongue and mouth are dry; in fact, the whole alimentary canal loses its natural moisture. The blood contains less than the normal proportion of water, and this I believe in a measure accounts for the deficiency of the secretions, and the constipation.

Dyspepsia.— All the varieties of dyspepsia may be met in the neurasthenic. Mathieu, who has written an able treatise on neurasthenia emphasizes the dyspeptic troubles in this disease. He also shows the strong affiliation which exists between the so-called essential dyspepsia and neurasthenia; in his estimation, every dyspeptic is a neurasthenic; he thinks, moreover, that neurasthenia without some degree of dyspepsia is a very rare event. He distinguishes three forms of nervous dyspepsia: (1) Neuro-motor dyspepsia, with or without hydrochloric deficiency; (2) hydrochloric excess; (3) hydrochloric deficiency and permanent gastric stasis, with or without organic hyperacidity. A large proportion of these dyspeptics have dilated stomachs, and suffer from morbid fermentations which give rise to toxic ptomaines; the latter are absorbed, and injuriously affect the nerve centres, possibly (as Bouchard thinks) causing the depression of spirits, the languor and hebitude and other nervous disorders of which the victims of gastric neurasthenia complain.

Vertigo.— A frequent symptom of neurasthenia, which seems in most cases to be linked to the dyspepsia and due to the auto-intoxication above mentioned, is vertigo. Neurasthenic patients are frequently dizzy when they are hungry, and along with the vertigo there may be a state of partial nausea. Others are dizzy after eating; the face becomes turgid and flushed; the head feels heavy; the mental faculties are torpid; if the patient attempts to walk, he totters like a drunken person. The exact pathogeny of this form is not known.

Melancholia.— No one has set forth more clearly than Dr. Edward Cowles, of the McLean Asylum, the relationship of neurasthenia to certain forms of insanity, and especially to melancholia, which seems to derive its being from a neurasthenic condition. He has shown that there is a definite gradation from the psychical depression which characterizes neurasthenia to true melancholia; in fact, every melancholic patient is a neurasthenic.

TREATMENT.

The treatment of neurasthenia comprises seclusion, rest, feeding, massage and electricity. Seclusion is indispensable in order that the patient may have freedom from care, and sequestration from the injurious home environment, where an injudicious sympathy may do much to foster a chronic invalidism. Again, seclusion enables the patient to be wholly under the control of the physician, a matter of vital importance, for there are no set rules of treatment for restoring these women to health. Each case stands by itself; each case is a study; each has an individuality to which the medical treatment must be adapted. Dr. S. Weir Mitchell first demonstrated the value of rest, with forced feeding, in the treatment of neurasthenia. The question of nutrition is of vital importance, because these patients are either wholly without appetite, or they reject wholesome food. Their nervous system seems to undergo waste in excess of repair, and they are always menaced with complete mental break-down. By beginning the treatment with iron, with malt and with a diet of skimmed milk, usually after a week's time the patient begins to crave solid food. Fixed rations of wholesome food at fixed hours are now given, together with as much new milk between meals as the patient can possibly digest; and it is wonderful how much food a delicate woman can soon dispose of. A goblet of milk is always given at bedtime to render the stomach hyperemic, and thus decongest the brain and promote sleep. The therapeutic effects of massage and electricity on the circulation are very striking in nerve exhaustion. Massage exercises the muscles without any effort of volition, and therefore without expenditure of nerve force. Electricity does the same This is very important in the treatment, for all voluntary muscle work is nerve work, and the nerve capital in these cases is too small to be drawn upon. Again, both massage and electricity raise the body temperature, stimulate the nervous system, promote the secretions, and increase the peristaltic action of the bowels. Static electricity, as a general tonic and also as a stimulant to depressed nervous functions, seems to be particularly of service. I employ this form of electricity constantly in the treatment of neurasthenia with marked benefit. Sittings of from ten to twenty minutes give remarkable improvement in dyspepsia and habitual constipation. The electrical current also soothes, quiets the nerves, and promotes sleep. Among the internal remedies are the bromides of sodium and potassium, ergot, the triple valerinates, phosphorus, strychnia and arsenic. The usefulness of liquids internally has been alluded to. I have a word to say about hot water as a beverage. A cupful should be drank one hour and a half before each meal, with the temperature as high as it can be borne. It increases downward peristalis, it stimulates the secretion of urine and alters its character very rapidly. It produces a gentle perspiration and a sense of warmth in the skin. It relieves dyspeptic symptoms. Haig has suggested that the beneficial results of giving large quantities of milk might be partially due to the percentage of water contained in milk and the washing out from the blood of all toxic material.

I may, in this connection, be permitted to allude to a patient, Mr. A. B., who came to my Home some six months ago for treatment: The case has several interesting features. First, there was a close resemblance to some degenerative disease of the brain and spinal cord, as dementia with tabes dorsalis or chronic myelitis. Second, there was marked prominence of symptoms the result of ocular defects. The patient was a man twenty-eight years old, whose mother always suffered from severe headaches, and who died in her second confinement. Two maternal aunts were tuberculous. The father was neuropathic. A. B. was robust from boyhood, but cannot remember when he did not suffer from headache. He was fitted for college at the age of seventeen, but was unable to pursue his studies further. He was of good habits; married at twenty, and became a trader; was kept constantly within doors at his business; was successful and made money. A sedentary life and devotion to business broke him down. The headaches increased in frequency and were so severe as to require frequent injections of morphia for their relief. By the aid of powerful hypnotics he was able to get some sleep. He was unable to exercise his eyes on account of the aggravated cephalalgia; and on account of some degree of photophobia, he wore a silk protector, in spite of which strong light was painful to him. Mentally he was much depressed, and suffered from both delusions and hallucinations. His method of speech was slow and hesitating; he was unable to think of the right word to express his ideas (amnesic aphasia), and the ideas themselves were formed with great difficulty. He had but little control over his upper extremities; because of the twitching of the muscles he was unable to grasp or hold articles in his hands firmly. He was ataxic in his gait. There was pain and tenderness over the spine. Sensation was normal and so was control of the sphincters. There was complete loss of sexual tone, but no atrophy of the testicles.

During his three years of sickness he had been treated for rheumatism and various cerebral and spinal diseases. When he came to the Home I was led to give attention to the condition of the eyes, and found the ocular defects most marked. There was pronounced astigmatism and asthenopia. The disorder of refraction had probably existed from birth, and the long-continued muscular strain, for both recti interni were weak, allowing a marked divergence of the eyes, had so irritated the nervous system as to cause the hyperemia of the brain and spinal cord, which, in turn, had produced such woful results. To relieve this eye-strain, I employed prisms worn constantly with their bases inward. I then made use of large prisms held between my fingers before the eyes with their bases outward, for ten minutes at a time twice a day. This gave the eyes a gymnastic exercise. The morphia was at once dropped from twenty grains per day to one and a half grains at night; and after ten days it was wholly discontinued. He was taking thirty grains of sulfonal every night to procure sleep, and this was discontinued at once; and I gave instead bromo-soda, bromo-caffeine, elixir of the valerinate of ammonia, etc. A hot tub-bath was given every third evening. I also ordered a hot sponge-bath to the whole spine every night, together with static insulation; and heavy sparks drawn from the back of the neck sufficed to relieve all pain and procure refreshing sleep every night. We gave the patient, the first thing in the morning a large cup of strong coffee without sugar or milk; then after one hour of massage and dry cupping along the whole length of the spine, he was allowed a breakfast of some light, farinaceous food with malt extract and five drops of Freligh's tonic. Three times a day, about an hour after meals, he had a tumbler of warm milk with fifteen grains of potassium iodide. The dinner and supper were eaten with the family, beef and chicken being allowed *ad libitum*, and the malt and tonic medicine being given after meals. Improvement began at once. He could soon use his eyes without fatigue or pain. The headaches gradually went away, the mind became clear, and the aphasia disappeared as the improvement continued. He would now sleep seven or eight hours every night without hypnotics. Exercise was regularly taken at the gymnasium, all excessive bodily movements being avoided on account of the spinal asthenia. He can now walk five or six miles a day, and has nearly regained his usual health. He has recovered the use of his arms and hands and plays the piano without difficulty. So complete is the restoration, that he will soon be able to return to his business.

SURGICAL TREATMENT OF PANCREATITIS, WITH A CASE.[1]

BY J. W. ELLIOT, M.D.

MUCH attention has been given to the cysts of the pancreas, and many cases have been reported as cured by operation. The hope that surgery will be useful in cases of inflammation of the pancreas is based on the following considerations:

(1) The presence of scars in the pancreas found at autopsies shows that a limited pancreatitis may recover. The celebrated case of Trafoyer reported by Chiari,[2] where after an illness of three or four weeks a slough was discharged from the bowels, which Rokitansky recognized as the sequestrated pancreas, is evidence in the same direction.

(2) Experiments on dogs by Mehring and Minkowski, show that part of the pancreas may be removed without impairment of health, whereas if the whole gland is removed a permanent diabetes is produced and the animal dies.

In man the tail of the pancreas has been successfully removed in one or more cases. Senn refers to a case reported by Kleberg,[3] where the pancreas protruded from an abdominal stab-wound. The protruding organ was ligated at its base and cut off; the part removed was examined microscopically and found to be a pancreas. The patient recovered.

(3) Several autopsies have revealed an abscess which could have been operated on with relief, and finally Körte[4] reports a recovery after operation in a case of suppurating pancreatitis.

Dr. Fitz,[5] in his now classical monograph, divides pancreatitis into three varieties: hemorrhagic, suppurative and gangrenous. In the recorded cases of hemorrhagic pancreatitis (exclusive of traumatic cases), death has usually followed the first symptoms so quickly that surgical intervention would have been impossible. It is therefore the suppurative, and possibly the gangrenous, pancreatitis, which should properly claim the attention of surgeons at this time. I therefore propose to study the signs and locations of the inflammation with reference to the possibility of recognizing and draining abscesses and thereby limiting the extension of the process.

Dr. Fitz gives the following admirable account of the symptoms based on an analysis of 22 cases:

"The cases of acute, suppurative pancreatitis usually began suddenly, with severe, generally intense, gastric, epigastric or abdominal pain, vomiting, and sometimes great prostration. The vomiting might be incessant and distressing, or it might give temporary relief to the pain. The ejected fluid was sometimes stringy and brown. The bowels were usually constipated, although diarrhea might occur within the first twenty-four hours. This latter symptom was not fre-

[1] Read before the Boston Society for Medical Improvement, January 21, 1895.
[2] Wiener med. Woch., 1860, xxx, p. 139.
[3] Langenbeck's Archiv. für Chir., ix, p. 525.
[4] Archiv. klin. Chir., 1894.
[5] The Middleton-Goldsmith Lecture, Boston, 1889.